Application/Control No.

10/039,929
Examiner

Alpus H. Hsu

Applicant(s)/Patent under
Reexamination
SCHUMANN-OLSEN ET AL.
Art Unit

2665

| Rejected | _ | (Through numeral)<br>Cancelled | N | Non-Elected  | Α | Appeal   |
|----------|---|--------------------------------|---|--------------|---|----------|
| Allowed  | + | Restricted                     | - | Interference | 0 | Objected |

| Cla                                   | im       |          |          |          |                | Dat             | е            |          |                 |          | ]:::: | Cla      | aim      |          |   |         | Date                | ,       |         |   |                 | CI       | aim        |                 |   |              |          | ate          | •        |          |          |          |
|---------------------------------------|----------|----------|----------|----------|----------------|-----------------|--------------|----------|-----------------|----------|-------|----------|----------|----------|---|---------|---------------------|---------|---------|---|-----------------|----------|------------|-----------------|---|--------------|----------|--------------|----------|----------|----------|----------|
|                                       | <u> </u> | ~        |          | _        |                |                 |              |          |                 |          |       |          | <u>m</u> | IT       |   |         |                     |         |         |   |                 |          | <u>-er</u> |                 | T   | T            |          |              |          |          | T        | $\neg$   |
| Final                                 | Original | 90/81/1  |          |          | 1              | 1               |              |          |                 |          |       | Final    | Original |          |   |         | 1                   |         |         |   |                 | Final    | Original   |                 |   |              | ı        |              |          | ı        |          | - [      |
| 🗓                                     | Žį.      | 9        |          |          |                |                 | 1            |          |                 |          |       | ιĒ       | )<br>iči |          |   |         |                     |         |         |   |                 | 這        | , ji       | H               |   |              |          |              |          |          |          |          |
|                                       |          | <u> </u> | _        |          | <u>_</u>       | L               | L            | L        | _               |          |       |          |          |          | _ _   | ᆚ       | Ш                   |         |         |   |                 |          |            |                 |   |              |          | _            |          | $\perp$  |          | ┙        |
| $\sqcup$                              | 1        |          |          |          |                |                 |              |          | <u> </u>        | L        |       |          | 51       |          | $\perp$   | $\perp$ | Ш                   |         |         | $\perp$                                 |                 |          | 101        | Ш               | $\Box$  |              | _        | $\Box$       |          | _        |          | ┙        |
|                                       | 2        |          | _        |          |                |                 | <u> </u>     | _        | ↓               |          |       |          | 52       |          |   |         | $\sqcup$            |         | Ц.      | _                                       |                 |          | 102        | Ш               |   |              | _        |              |          | _        | _        | _        |
|                                       | ω        |          | _        |          |                | _               | ┖            | ┞        | <u> </u>        |          |       |          | 53       |          | $\perp$   | ┸       | $\sqcup$            | $\perp$ | 4_      | _                                       |                 |          | 103        | Ш               |   | _            | _        | _            |          | 4        | _        | _        |
|                                       | 4        |          | L        |          | <u> </u>       | _               | <u> </u>     | <u> </u> | <u> </u>        |          |       | $\Box$   | 54       | 1        |   | _       | $\sqcup$            | _       |         | Ц.                                      |                 |          | 104        | Ш               | _   |              | _        | _            | _        | _        | 4        | _        |
|                                       | 5        |          |          |          | _              | ┖               | ┖            | L        | $\vdash$        | <u> </u> |       |          | 55       |          |   |         | $\sqcup$            | _       | $\bot$  | <u> </u>                                |                 |          | 105        | Ш               | 4   |              |          | _            | _        | _        | 4        |          |
| $\vdash$                              | 6        | _        |          |          | ļ              | <u> </u>        | L            | L        | ↓_              |          |       |          | 56       |          | _   | 4       | $\sqcup$            | _       |         |   |                 |          | 106        | Ш               | 4   | _            |          | _            | _        | _        | 4        | _        |
| H                                     | 7        |          | <u> </u> |          | <u> </u>       | <u> </u>        | <u> </u>     | <u> </u> | $oxed{\bot}$    |          | l     |          | 57       | _        |   | _       | 1_1                 | _       |         | $\sqcup$                                |                 |          | 107        | Ш               | 4   | 4            | _        |              | _        | _        | 4        | _        |
| 3                                     | 8        | =        | _        |          | <u> </u>       | <u> </u>        | <u> </u>     | <u> </u> | _               | _        |       |          | 58       | -        | 4   | ╄-      | $\sqcup$            | _       |         | $\vdash$                                |                 |          | 108        | Щ               | _   | 4            | 4        |              | _        | _        | _        | _        |
| 3                                     | 9        | =        | -        |          | ┡              | <u> </u>        | ⊢            | ļ        | -               | _        |       |          | 59       | -        | +   | 1       | ┦                   | 4       | -       | -                                       |                 |          | 109        | Н               | -   |              | _        | _            | _        | _        | 4        | 4        |
| \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 10       | _        | <u> </u> |          | ├_             | ⊬               | ├-           | ├        |                 | <u> </u> |       |          | 60       | $\perp$  | +   | +       | $\vdash$            | +       |         | $\vdash$                                |                 | <u> </u> | 110        | $\sqcup$        | $\dashv$  | $\dashv$     | 4        | 4            | -        | $\dashv$ | $\dashv$ | 4        |
| 7                                     | 11       | -        | -        | _        | ├              | -               | $\vdash$     | $\vdash$ |                 | <u> </u> |       | $\vdash$ | 61       | -        |   | +       | $\vdash$            | +       | +       | $\vdash$                                |                 | L        | 111        | $\vdash \vdash$ |   | -            |          | 4            |          |          | $\dashv$ | _        |
| 8                                     | 12       | +        |          | _        | <del> </del> - | $\vdash$        | $\vdash$     |          | $\vdash$        | <u> </u> |       | -        | 62       |          | +   | +       | $\vdash$            | +       | +       | $\vdash$                                |                 |          | 112        | $\vdash \dashv$ | -   | $\dashv$     |          |              |          |          | -+       |          |
| 17                                    | 13       | +        | $\vdash$ |          | ⊢              | -               | ├            | -        | -               | -        |       |          | 63       | -        | -   | +-      | $\vdash \vdash$     | +       | +       | $\vdash$                                |                 |          | 113        | $\vdash \vdash$ | -   | 4            | $\dashv$ | -            | _        | -        | -        | $\dashv$ |
| 141                                   | 14<br>15 |          | $\vdash$ | _        | -              | -               | <del> </del> | 1        |                 | <u> </u> |       |          | 64<br>65 | $\dashv$ | +   | +-      | $\vdash$            |         | - -     | $\vdash$                                |                 |          | 114        |                 | -   | $\dashv$     | -        | -            |          | -        | $\dashv$ | -        |
| 8                                     | 16       | +        | $\vdash$ | _        | -              | $\vdash$        | $\vdash$     |          | 1               | -        |       |          | 66       | -+       | +   | +       | $\vdash$            | +       | +       | $\vdash$                                |                 |          | 115<br>116 | $\vdash$        | +   | $\dashv$     | $\dashv$ | $\dashv$     | -        | $\dashv$ | $\dashv$ | -        |
| 13                                    | 17       | ㅗ        |          |          |                | $\vdash$        |              |          | -               | -        |       |          | 67       | +        | +   | +       | $\vdash$            | +       |         | ╁╌┤                                     |                 |          | 117        | $\vdash$        | $\dashv$  | $\dashv$     | -        | $\dashv$     |          | +        | $\dashv$ | $\dashv$ |
| 14                                    | 18       | $\simeq$ | Н        | _        | $\vdash$       | $\vdash$        | <del> </del> | _        | +-              |          |       |          | 68       | +        | +   | +-      | ┞─┤                 |         | - -     | $\vdash$                                |                 |          | 118        | $\vdash$        | -   | $\dashv$     | -        | +            |          | $\dashv$ | +        | $\dashv$ |
| +                                     | 19       |          |          |          | ┢              | $\vdash$        | H            | ├        |                 |          |       |          | 69       |          | +   | +       | $\vdash$            | +       | ┽       | +                                       |                 |          | 119        | $\vdash \vdash$ | $\dashv$  | $\dashv$     | -        |              |          | $\dashv$ | $\dashv$ | $\dashv$ |
| $\vdash$                              | 20       |          |          |          | ┢              | ├-              | ┢            | ⊢        |                 | _        |       |          | 70       |          |   | ╁╴      | $\vdash$            | +       | +       | Н                                       |                 |          | 120        | $\vdash$        | +   | $\dashv$     | $\dashv$ | $\dashv$     | -        | $\dashv$ | $\dashv$ | $\dashv$ |
| $\vdash$                              | 21       | _        |          |          | -              | H               | ┢            | ┢        | -               | _        |       |          | 71       | $\dashv$ | +   | ╁       | -                   | +       | +-      | +                                       |                 |          | 121        |                 | +   | $\dashv$     | $\dashv$ | -            | $\dashv$ | $\dashv$ | +        | $\dashv$ |
|                                       | 22       | _        | $\dashv$ |          | ┢              |                 | -            |          | -               | -        |       |          | 72       | +        | +   | +       | ╁┯┼                 | +       | ┿       | $\vdash$                                |                 |          | 122        | $\vdash$        | -   | $\dashv$     | -        |              | $\dashv$ | +        | $\dashv$ | $\dashv$ |
|                                       | 23       | _        | -        |          |                |                 |              | ┢╌       | -               |          |       |          | 73       | +        | +   | ╁       | ┨                   | +       | +       | $\vdash$                                |                 |          | 123        | -               | -   | -            | $\dashv$ | ┪            | -        | -        | -        | $\dashv$ |
|                                       | 24       |          | Н        | _        | $\vdash$       | H               |              | -        | $\vdash$        | -        |       |          | 74       | $\dashv$ | +-  | +       | $\vdash$            | +       | +       | Н                                       |                 |          | 124        | $\vdash$        | -   | +            | $\dashv$ | $\dashv$     | -        | -        | $\dashv$ | $\dashv$ |
|                                       | 25       | _        |          |          | Н              | H               | $\vdash$     |          |                 |          |       |          | 75       | $\dashv$ | +   | +-      |                     |         | +       | Н                                       |                 |          | 125        |                 | +   | _            | $\dashv$ | -+           | $\dashv$ | -+       | 十        | ┥        |
|                                       | 26       |          |          | _        |                |                 |              |          | П               |          |       |          | 76       | $\top$   | +   | +       |                     | _       | 1       | Н                                       |                 |          | 126        | -               | -   | $\dashv$     | $\dashv$ | _            | $\dashv$ | $\dashv$ | +        | ┪        |
|                                       | 27       |          |          |          |                |                 |              |          |                 | _        |       |          | 77       |          | $\top$  | T       | $\Box$              | _       |         | П                                       |                 |          | 127        | $\Box$          | 十   | 7            |          | 7            | $\neg$   | 1        | $\dashv$ | ┪        |
|                                       | 28       |          |          |          |                |                 |              | П        |                 |          |       |          | 78       |          | 1   | T       |                     | T       |         | $\Box$                                  |                 |          | 128        |                 | $\dashv$  | $\neg$       | T        | 寸            | $\dashv$ | 寸        | T        | ╗        |
|                                       | 29       |          |          |          |                |                 |              |          |                 |          |       |          | 79       | -t       | 1   | $\top$  |                     |         |         | П                                       |                 |          | 129        |                 | $\neg$  | 7            |          | 寸            | 一        | 寸        | $\dashv$ | 7        |
|                                       | 30       |          |          |          |                |                 |              |          | П               |          |       |          | 80       | 1        |   | $\top$  |                     |         |         | П                                       |                 |          | 130        | $\Box$          | 十   | ヿ            |          | ヿ            | 寸        | 十        | $\top$   | ヿ        |
|                                       | 31       |          |          |          |                |                 |              |          |                 |          |       |          | 81       |          |   |         |                     |         |         | П                                       |                 |          | 131        |                 |   | $\dashv$     | $\dashv$ | 7            | 寸        | 丁        | $\neg$   | $\neg$   |
|                                       | 32       |          |          |          |                |                 |              |          |                 |          |       |          | 82       |          |   |         |                     |         |         |   |                 |          | 132        |                 | _   | _†           |          |              |          | $\top$   |          |          |
|                                       | 33       |          |          |          |                |                 |              |          |                 |          |       |          | 83       |          | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$ |         |                     |         |         |   |                 |          | 133        |                 |   |              |          |              |          | $\Box$   |          |          |
|                                       | 34       | _]       | [        |          |                |                 |              |          |                 |          |       |          | 84       |          |   |         | $\Box$              |         |         |   |                 |          | 134        |                 |   |              |          |              | J        | $\Box$   | $\Box$   |          |
|                                       | 35       | _]       |          |          | <u> </u>       | Ш               |              |          | Ш               |          |       | I        | 85       | $\bot$   |   |         |                     |         |         |   | iii [           |          | 135        |                 | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$ | $\Box$       | $\Box$   | $\Box$       | $\Box$   | $\Box$   |          |          |
|                                       | 36       |          |          |          | L              | Ш               |              | Ш        | Ш               |          |       |          | 86       |          |   | _       | Ш                   |         |         | ╚                                       | [               |          | 136        |                 | $\perp$   | $\perp$      |          | $\Box$       | $\Box$   | $\Box$   | $\perp$  | _]       |
| <b>L</b>                              | 37       | _        | _        |          |                | Ш               | Щ            | Ш        | Ш               |          |       |          | 87       |          | $\perp$   | $\perp$ | Ц                   | $\perp$ | $\perp$ | Ш                                       |                 | ]        | 137        |                 |   |              | _[       |              |          |          | $\perp$  | _        |
|                                       | 38       | _        |          |          |                | Ш               | Ш            |          | $\sqcup$        |          |       |          | 88       |          | 4   | 1_      | $\sqcup$            | _       |         | Ш                                       |                 |          | 138        | $\Box$          |   | _            | _        | _            |          | _        | $\perp$  | $\dashv$ |
|                                       | 39       | _        |          |          | Ш              | Ш               | Ш            | Ш        |                 |          |       |          | 89       | 4        | +   | ↓_      | $\sqcup$            | _       |         | Ш                                       |                 |          | 139        | $\sqcup$        | 4   | $\downarrow$ | _        | $\downarrow$ | _        | _        | _        | _        |
|                                       | 40       | _        |          | _        | Щ              | Ш               | Ш            | Щ        | $\sqcup$        |          |       |          | 90       |          | $\bot$  | 1       | $\sqcup$            | $\perp$ |         | Ш                                       |                 |          | 140        | Ц               | 4   | _            | 4        | 4            | _        | $\dashv$ | $\perp$  | $\dashv$ |
| $\vdash$                              | 41       | _        | _        | _        | $\vdash$       | $\vdash \vdash$ |              |          | $\sqcup$        | _        |       |          | 91       | -        | +   | ╄       | $\vdash$            | +       | $\perp$ | Н                                       | <b> </b>        |          | 141        | $\sqcup$        | 4   | 4            | $\dashv$ | 4            | _        | $\perp$  | _        | _        |
|                                       | 42       | _        | _        | _        | Щ              |                 | Щ            | Щ        | $\vdash \vdash$ | _        |       |          | 92       | +        | +   | ↓_      | $\vdash \downarrow$ | +       | -       | Ш                                       |                 |          | 142        | $\sqcup$        | +   | 4            | $\dashv$ | $\dashv$     | 4        | 4        | 4        | _        |
|                                       | 43       | 4        | -        | _        | Щ              |                 |              | <b></b>  | $\sqcup$        | _        |       |          | 93       | -        | 4   | _       | $\sqcup$            | -       | -       | Н                                       |                 |          | 143        | _               | 4   | 4            | 4        | 4            | 4        | _        | $\perp$  | _        |
| ├─┼                                   | 44       |          |          | _        | -              | $\vdash$        |              | $\vdash$ | $\vdash \vdash$ | $\dashv$ |       |          | 94       | +        | +-  | +-      | $\vdash \vdash$     | - -     | +-      | Н                                       |                 |          | 144        | $\dashv$        | -   | $\dashv$     | $\dashv$ | 4            |          | -        | +        | $\dashv$ |
|                                       | 45       | -        |          | _        |                | -               | $\vdash$     |          | $\vdash$        |          |       |          | 95       | -        | +   | ╁       | $\sqcup$            | - -     |         | Ш                                       | 1               |          | 145        | $\dashv$        | +   | +            | +        | $\dashv$     |          | +        | +        | 4        |
| $\vdash \vdash$                       | 46       | -        | -        |          |                | $\vdash \vdash$ | $\dashv$     |          | $\vdash \vdash$ | _        |       |          | 96       |          | +   | +       | $\vdash \vdash$     | +       |         | Н                                       | -               |          | 146        | $\dashv$        | -+-   | +            | $\dashv$ | -            | -        |          | -        | $\dashv$ |
|                                       | 47       | $\dashv$ |          |          | -              | $\vdash$        | -            | -        | $\vdash$        |          |       |          | 97       |          | +   | +       | $\vdash \vdash$     | - -     | +       | Н                                       |                 |          | 147        | +               |   | 4            | +        | +            | -        | +        | +        | -        |
| -                                     | 48       | -        | -        | $\dashv$ | -              | $\vdash$        |              | -        | $\vdash$        |          |       |          | 98       |          | +   | +-      | $\vdash$            | +       | +       | H                                       | - }             |          | 148        | +               | +   | +            | $\dashv$ | $\dashv$     | -        | +        | -        | $\dashv$ |
| -                                     | 49<br>50 |          | -        |          | -              | -               |              | $\dashv$ | $\vdash \vdash$ | _        |       | $\dashv$ | 99       | -        | -   | +       | $\vdash \vdash$     | +       | +-      | $\vdash \vdash$                         | 1               |          | 149        | -               | -   | +            | +        | +            | -+       | -        | +        | $\dashv$ |
| LL                                    | טט [     |          |          | ┙        | لــــــ        | ш               | $\perp$      |          | Ш               |          | [     |          | 100      | L        | 1.  |         | LL.                 |         |         | اللــــــــــــــــــــــــــــــــــــ | :::: <b>:</b> [ |          | 150        |                 | _L  |              |          | Щ            |          | $\perp$  | Щ.       |          |